

Biological Analysis Report

NW-DIST-2016-06-21-02

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Overflow Analyses Performed By:
University of West Florida
11000 University Parkway
Pensacola, FL 32514
DOH Accreditation E71969

Event Description: **Bayou Chico BMAP**
Request ID: **RQ-2016-05-16-15**
Customer: **NW-DIST**
Project ID: **BMAP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
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Attn: Cheryl Bunch

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Certified by: Daisys Matthews,

Date Certified: 19-JUL-2016 08:16

A handwritten signature in black ink, appearing to read "D. Matthews". The signature is stylized with a large, sweeping initial "D" and a cursive "Matthews".

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Chlorophyll/Grain Size/BOD and Overflow.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Sander's Beach

Collection Date/Time: 06/20/2016 10:40

Field ID: F

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1809554	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.6		ug/L	P307200	
		Phaeophytin-a	0.91	IV	ug/L	P307200	
		Chlorophyll/Phaeophytin Ratio	1.5			P307200	
		Chlorophyll-a, Uncorrected	3.3		ug/L	P307200	
1809562	SM 9222 D	Fecal Coliforms-Membrane Filter	7	B	cfu/100 mL		

Ref. Method and Comment:

SM 10200 H (mod.): Result is V-qualified due to laboratory blank failure for phaeophytin-a component only.

Sample Location: Mandaloy

Collection Date/Time: 06/20/2016 11:10

Field ID: E

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1809555	SM 10200 H (mod.)	Chlorophyll-a, Corrected	8.8		ug/L	P307200	
		Phaeophytin-a	0.53	IV	ug/L	P307200	
		Chlorophyll/Phaeophytin Ratio	1.7			P307200	
		Chlorophyll-a, Uncorrected	9.5		ug/L	P307200	
1809563	EPA 1600 (MF)	Enterococci-Membrane Filter	4	BV	cfu/100 mL		
	SM 9222 D	Fecal Coliforms-Membrane Filter	5	B	cfu/100 mL		

Ref. Method and Comment:

SM 10200 H (mod.): Result is V-qualified due to laboratory blank failure for phaeophytin-a component only.

EPA 1600 (MF): Analyte detected in method blank = Limit of Detection and > 1/10th the concentration in the sample.

Sample Location: Jones at Old Corry

Collection Date/Time: 06/20/2016 11:45

Field ID: D

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1809556	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.75	I	ug/L	P307200	
		Phaeophytin-a	0.71	IV	ug/L	P307200	
		Chlorophyll/Phaeophytin Ratio	1.4			P307200	
		Chlorophyll-a, Uncorrected	1.2		ug/L	P307200	
1809564	EPA 1600 (MF)	Enterococci-Membrane Filter	220		cfu/100 mL		
	SM 9222 D	Fecal Coliforms-Membrane Filter	390		cfu/100 mL		

Ref. Method and Comment:

SM 10200 H (mod.): Result is V-qualified due to laboratory blank failure for phaeophytin-a component only.

Sample Location: Jackson at Old Corry

Collection Date/Time: 06/20/2016 12:20

Field ID: A

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1809557	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.2	I	ug/L	P307201	
		Phaeophytin-a	0.40	U	ug/L	P307201	
		Chlorophyll/Phaeophytin Ratio	1.6			P307201	
		Chlorophyll-a, Uncorrected	1.4		ug/L	P307201	
1809565	EPA 1600 (MF)	Enterococci-Membrane Filter	330		cfu/100 mL		
	SM 9222 D	Fecal Coliforms-Membrane Filter	480		cfu/100 mL		

Ref. Method and Comment:

EPA 1600 (MF): Verified

SM 9222 D: Verified

Sample Location: Jackson at New Warrington

Collection Date/Time: 06/20/2016 12:40

Field ID: G

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1809558	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.3	I	ug/L	P307201	
		Phaeophytin-a	0.45	I	ug/L	P307201	
		Chlorophyll/Phaeophytin Ratio	1.5			P307201	
		Chlorophyll-a, Uncorrected	1.6		ug/L	P307201	
1809566	EPA 1600 (MF)	Enterococci-Membrane Filter	1200	B	cfu/100 mL		
	SM 9222 D	Fecal Coliforms-Membrane Filter	220		cfu/100 mL		

Sample Location: Bayou Chico at Navy

Collection Date/Time: 06/20/2016 14:00

Field ID: C

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1809559	SM 10200 H (mod.)	Chlorophyll-a, Corrected	6.8		ug/L	P307201	
		Phaeophytin-a	0.73	U	ug/L	P307201	
		Chlorophyll/Phaeophytin Ratio	1.7			P307201	
		Chlorophyll-a, Uncorrected	7.0		ug/L	P307201	
1809567	EPA 1600 (MF)	Enterococci-Membrane Filter	86		cfu/100 mL		
	SM 9222 D	Fecal Coliforms-Membrane Filter	162	B	cfu/100 mL		

Sample Location: Bayou Chico at "W" St.

Collection Date/Time: 06/20/2016 14:25

Field ID: B

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1809560	SM 10200 H (mod.)	Chlorophyll-a, Corrected	6.8		ug/L	P307201	
		Phaeophytin-a	3.4		ug/L	P307201	
		Chlorophyll/Phaeophytin Ratio	1.5			P307201	
		Chlorophyll-a, Uncorrected	9.0		ug/L	P307201	
1809568	EPA 1600 (MF)	Enterococci-Membrane Filter	44		cfu/100 mL		
	SM 9222 D	Fecal Coliforms-Membrane Filter	162	B	cfu/100 mL		

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P307200

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.55	U	ug/L
Chlorophyll-a, Uncorrected	0.40	U	ug/L
Phaeophytin-a	0.45	I	ug/L

Reference Method: SM 10200 H (mod.)
Batch ID: P307201

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.55	U	ug/L
Chlorophyll-a, Uncorrected	0.40	U	ug/L
Phaeophytin-a	0.40	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P307200

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	103		P	84 - 116

Reference Method: SM 10200 H (mod.)
Batch ID: P307201

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	100		P	84 - 116

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P307200

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1809510	Chlorophyll/Phaeophytin Ratio	0.0	Sample	P	0 - 25
1809510	Chlorophyll-a, Corrected	3.73	Sample	P	0 - 25
1809510	Chlorophyll-a, Uncorrected	3.38	Sample	P	0 - 25
1809510	Phaeophytin-a	2.24	Sample	P	0 - 25

Reference Method: SM 10200 H (mod.)
Batch ID: P307201

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1809659	Chlorophyll/Phaeophytin Ratio	0.0	Sample	P	0 - 25
1809659	Chlorophyll-a, Corrected	12.6	Sample	P	0 - 25
1809659	Chlorophyll-a, Uncorrected	13.0	Sample	P	0 - 25
1809659	Phaeophytin-a	13.6	Sample	P	0 - 25

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
SM 10200 H (mod.)	Chlorophyll/Phaeophytin Ratio				0.0	
	Chlorophyll/Phaeophytin Ratio				0.0	
	Chlorophyll-a, Corrected	103			3.73	
	Chlorophyll-a, Corrected	100			12.6	
	Chlorophyll-a, Uncorrected				3.38	
	Chlorophyll-a, Uncorrected				13.0	
	Phaeophytin-a				2.24	
	Phaeophytin-a				13.6	

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 1600 (MF) / E71969	Enterococci by membrane filter method by UWF Overflow Laboratory for NWD	1809563, 1809564, 1809565, 1809566, 1809567, 1809568
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, phaeophytin and ratio by spectrophotometry	1809554, 1809555, 1809556, 1809557, 1809558, 1809559, 1809560
SM 9222 D / E71969	Fecal coliforms by membrane filter method by UWF Overflow Laboratory for NWD	1809562, 1809563, 1809564, 1809565, 1809566, 1809567, 1809568

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 1600 (MF)	06/20/2016			06/20/2016 16:14	UWF Lab	1809565
	06/20/2016			06/20/2016 16:17	UWF Lab	1809568
	06/20/2016			06/20/2016 16:21	UWF Lab	1809567
	06/20/2016			06/20/2016 16:24	UWF Lab	1809564
	06/20/2016			06/20/2016 16:28	UWF Lab	1809563
	06/20/2016			06/20/2016 16:35	UWF Lab	1809566
	06/21/2016	06/21/2016 13:50	Brian Cumbie	06/30/2016	Kim M. Spencer	1809554, 1809555, 1809556, 1809557, 1809558, 1809559, 1809560
SM 10200 H (mod.)	06/20/2016			06/20/2016 16:08	UWF Lab	1809565
	06/20/2016			06/20/2016 16:13	UWF Lab	1809568
	06/20/2016			06/20/2016 16:18	UWF Lab	1809567
	06/20/2016			06/20/2016 16:22	UWF Lab	1809564
	06/20/2016			06/20/2016 16:26	UWF Lab	1809563
	06/20/2016			06/20/2016 16:31	UWF Lab	1809562
	06/20/2016			06/20/2016 16:40	UWF Lab	1809566